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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/743,259	12/22/2003	Jeffrey Dean Lindsay	KCX-736 (18588)	4457

22827 7590 05/12/2009

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POST OFFICE BOX 1449
GREENVILLE, SC 29602-1449

EXAMINER	
CRAIG, PAULA L	
ART UNIT	**PAPER NUMBER**
3761	
MAIL DATE	**DELIVERY MODE**
05/12/2009	PAPER

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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte JEFFREY DEAN LINDSAY and FUNG-JOU CHEN

Appeal 2009-1893
Application 10/743,259
Technology Center 3700

Decided:[1] May 12, 2009

Before ERIC GRIMES, FRANCISCO C. PRATS, and MELANIE L. McCOLLUM, *Administrative Patent Judges*.

GRIMES, *Administrative Patent Judge*.

DECISION ON APPEAL

This is an appeal under 35 U.S.C. § 134 involving claims directed to an absorbent garment having adhesive applied in a swirl-like pattern. The

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[1] The two-month time period for filing an appeal or commencing a civil action, as recited in 37 C.F.R. § 1.304, begins to run from the decided date shown on this page of the decision. The time period does not run from the Mail Date (paper delivery) or Notification Date (electronic delivery).

Examiner has rejected the claims as obvious. We have jurisdiction under 35 U.S.C. § 6(b). We affirm.

STATEMENT OF THE CASE

The Specification discloses that "controlled amounts of adhesive may be applied to the components [of a disposable absorbent product] in order to improve the overall properties of the product. For instance, the amount of adhesive applied to the components may be varied in order to counteract the mechanical stresses … which the components undergo during use." (Spec. 2: 7-19).

Claims 13, 16, 20, 22-24, 26, 29, 33, and 35-37 are on appeal.[2] Claim 13 is representative and reads as follows:

> Claim 13: An absorbent garment comprising:
> a liner;
> an outer cover;
> an absorbent structure positioned between the liner and the outer cover; and
> an adhesive positioned between at least two of the liner, the outer cover and the absorbent structure, the adhesive being applied at least partly according to a swirl-like pattern,
> wherein the swirl-like pattern comprises a plurality of loops having a size, the size of the loops changing as a function of distance,
> the adhesive pattern changing as a function of distance according to adhesive dose in weight per area along said distance, wherein the adhesive dose of the adhesive pattern changes as a function of distance,
> wherein the adhesive pattern alternates between the swirl-like pattern and a continuous bead, and
> wherein the weight per unit area of adhesive applied varies by at least 20% by weight.

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[2] Claims 15, 18-19, 25, 28, and 31-32 are also pending but have been withdrawn from consideration by the Examiner (Appeal Br. 2).

OBVIOUSNESS

Issue

The Examiner has rejected claims 13, 16, 20, 22-24, 26, 29, 33, and 35-37 under 35 U.S.C. § 103 as being obvious in view of Harris[3] and Yoshioka.[4] The rejected claims have not been argued separately and therefore stand or fall with claim 13. 37 C.F.R. § 41.37(c)(1)(vii).

The Examiner finds that "Harris teaches an adhesive secured between two flat substrates such as those forming a diaper" (Answer 3). The Examiner finds that the adhesive is "applied at least partly according to a swirl-like pattern, … including a plurality of loops having a size" (*id.*) and that the adhesive pattern alternates "between the swirl-like pattern and a continuous bead" (*id.* at 4). The Examiner finds that Harris teaches a "change in adhesive dose as a function of distance," and concludes that "in light of Harris' teaching that the swirl-like patterns may not have uniform shapes and may be irregularly shaped, it would be obvious to modify Harris to include a change in loop size as a function of distance" (*id.* at 8).

The Examiner finds that Yoshioka discloses "elastic strands adhesively attached between a liner and an outer cover and adjacent the interior surface of the outer cover," and the Examiner concludes that it "would have been obvious to one of ordinary skill in the art of diaper manufacturing to modify Harris for the adhesively attached flat substrates to be the liner and outer cover of an absorbent garment, as taught by Yoshioka" (*id.* at 5).

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[3] Harris, US 2003/0173018 A1, Sept. 18, 2003.
[4] Yoshioka et al., US 6,635,798 B1, Oct. 21, 2003.

Appellants contend that the Examiner erred in finding the combination of Harris and Yoshioka to disclose or suggest the claimed adhesive pattern (Appeal Br. 6-7).

The issue with respect to this rejection is: Does the evidence of record support the Examiner's conclusion that the combination of Harris and Yoshioka discloses or suggests the claimed adhesive pattern?

Findings of Fact

1. The Specification discloses that the

> adhesive pattern changes as a function of distance. More particularly, the adhesive pattern changes according to at least one of pattern breadth or adhesive dose in weight per unit area in a particular direction (i.e., the direction of application in the article, defined by the path of the article relative to the adhesive applicator, or the path of the adhesive applicator relative to the article).

(Spec. 3:5-8.)

2. The Specification does not define a "function of distance," as recited in claim 13, to require any particular pattern change in any particular direction.

3. Harris discloses "technology associated with applying continuous adhesive filaments to one or more elastic strands for securing the elastic strands to flat substrates and, more particularly, to the securement of elastic strands to substrates such as those used in producing hygienic articles (e.g., diapers)" (Harris at ¶ 0002).

4. Harris discloses that a

> continuous filament of adhesive is dispensed onto the [elastic] strand in a pattern configured with distinct adhesive areas of increased mass coupled by thinner filament sections. These areas of increased adhesive will be referred to herein generally

> as adhesive masses with the understanding that they may take various forms, typically irregular in shape, due to the fact that they are formed by an adhesive filament that has crossed over onto itself at least once or otherwise conglomerated at a distinct area.

(*Id.* at ¶ 0010.)

5. Harris discloses that the

> adhesive masses are contacted with the strand when the … spacing between the elastic strand and the sheet … is sufficient to allow the adhesive to flow and/or wrap underneath the strand prior to reaching the second position. The elastic strand is then bonded to the substrate at the second position using at least the adhesive masses which have been accurately dispensed onto the strand in serial, spaced apart fashion.

(*Id.* at ¶ 0010.)

6. Figure 7 of Harris is shown below:

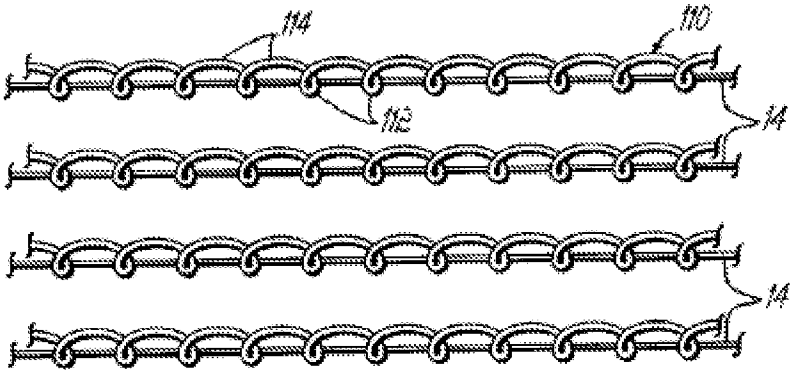

Figure 7 shows "a schematic view of expanded swirled adhesive patterns … applied to respective elastic strands" (*id.* at ¶ 0026).

7. Harris discloses that a "swirl pattern 110 [is] dispensed onto elastic strands 14. … Swirl pattern 110 has crossover points 112 which define and form adhesive masses. Adhesive masses 112 are connected together by thinner filament sections 114." (*Id.* at ¶ 0039).

8. Yoshioka discloses a laminated panel that forms, e.g., a diaper, that comprises a top sheet, a back sheet, an absorbent core, and an adhesive applied on at least one inner surface of the top sheet or back sheet, "wherein the adhesive forms a plurality of separated adhesive lines extending in one direction, each of the separated adhesive lines bending in a generally zigzag pattern in the one direction" (Yoshioka, claim 1).

9. Yoshioka discloses that the laminated panel comprises leg elastic members and a waist elastic member "joined to at least one of inner surfaces of the topsheet and the backsheet by means of adhesive in an extended state" (*id.*).

Principles of Law

"[W]hen the question is whether a patent claiming the combination of elements of prior art is obvious," the answer depends on "whether the improvement is more than the predictable use of prior art elements according to their established functions." *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 417 (2007).

Analysis

Claim 13 is directed to an absorbent garment in which (i) an adhesive is applied at least partly in a swirl-like pattern having loops that change size as a function of distance, (ii) the weight per area of the adhesive changes as a function of distance and varies by at least 20%, and (iii) the adhesive pattern alternates between the swirl-like pattern and a continuous bead.

Harris discloses that elastic members of a diaper may be secured to a substrate member by applying adhesive in a swirl pattern to the elastic. Harris also discloses that the loops in the swirl pattern are not uniform; i.e.,

the pattern varies with distance in terms of the size of the loops of the swirls, and that the adhesive pattern alternates between a swirl-like pattern (the loops) and a continuous bead (the filaments connecting the loops). Finally, Harris discloses that the amount of adhesive applied varies between the loops and the thinner filament sections. Although Harris does not disclose that the weight of the adhesive varies by at least 20%, we agree with the Examiner (Answer 4) that this amount of variation would have been obvious, and Appellants do not dispute the Examiner's finding on this point.

Yoshioka discloses that elastic members of a diaper are attached to the inner surface of the top sheet or back sheet (i.e., between the liner and outer cover). In view of these disclosures, it would have been obvious to one of ordinary skill in the art to employ the elastic attachment method of Harris for positioning elastic as taught by Yoshioka. Such a combination is no more than the predictable use of prior art elements according to their established functions.

Appellants argue that the cited references do not disclose or suggest a swirl-like pattern where the loops change as a function of distance or an adhesive pattern in which the adhesive dose and weight per area vary with distance (Appeal Br. 7). Appellants also argue that the loops in Harris conglomerate into masses and disappear in the final product (*id.* at 7-8).

These arguments are not persuasive. As discussed above, the Specification does not define the phrase "changing as a function of distance" to require any particular change in any particular direction. Thus, the claim language, given its broadest reasonable interpretation, requires only that the pattern vary with distance, which Harris' pattern does since Harris discloses

that the size of loops is not uniform, i.e. the size of the loops will change with distance.

With regard to Appellants' argument that Harris' loops conglomerate into masses, claim 13 does not require that the final product contains a swirl-like pattern of adhesive, or loops that vary in size, only that the adhesive is applied in the recited pattern. Harris discloses that adhesive is applied in a swirl-like pattern.

Appellants also argue that the cited references do not disclose or suggest the claim limitation that the "adhesive pattern alternates between the … swirl-like pattern and … a continuous bead" (Appeal Br. 9).

This argument is not persuasive. Harris discloses that the adhesive is applied in a swirl-like pattern (element 112 in Harris' Figure 7) and that a continuous bead (element 114 in Harris' Figure 7) is applied between the swirls. Claim 13 does not require the continuous bead of adhesive to be applied in a straight line.

Appellants also argue that adhesive masses are used to adhere the elastic to the substrate in Harris and that adhering the elastic with a "swirl-like pattern comprising a plurality of loops that change as a function of distance would not, and could not, be incorporated onto the elastic strands of Harris" (Appeal Br. 11).

This argument is not persuasive. As discussed above, changing the masses of Harris to a swirl-like pattern is not required to meet the limitations of claim 13 because the claim only requires that the adhesive is applied in swirl-like pattern, as disclosed in Harris.

Conclusion of Law

The evidence of record supports the Examiner's conclusion that the combination of Harris and Yoshioka discloses or suggests the claimed adhesive pattern.

SUMMARY

We affirm the rejection of claims 13, 16, 20, 22-24, 26, 29, 33, and 35-37 under 35 U.S.C. § 103 as being obvious in view of Harris and Yoshioka.

TIME PERIOD FOR RESPONSE

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a).

AFFIRMED

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